NURSING NEXUS

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ARE YOU READY? CAN YOU HEAR ME?

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(with help from the hyperbaric team: Janet L. Schreiner, R.N.; Caren Chaney, R.N.; Jim Bell, C.H.T.; and William Gossett, R.T., C.H.T.)

"Are you ready, can you hear me?" — the hyperbaric technician asks the nurse inside the chamber as the heavy door closes. The technician, who is outside the chamber, communicates with the people inside the closed chamber by use of a camera, intercom system, or phone. As the chamber is pressurized, the air molecules become closer together, making the inside of the chamber feel warm, but it is quickly cooled off inside by use of a cooling system. During the pressurization of the chamber, the patients and attendants (nurses or physicians who are with the patients at all times while in the chamber) are working to clear their ears by swallowing or chewing gum. The sensation is much like being on an airplane but occurs more quickly and requires more effort to clear the ears.

As of March of 1998, I became the manager of the HCMC Hyperbaric Medicine Unit. In the past six months, I have become familiar with Hyperbaric Medicine, a unique treatment option. I have witnessed the benefits received by many patients with difficult-to-treat conditions, who would not have recovered as well, or as quickly, without hyperbaric oxygen (HBO) treatment.

The unit, which has been in operation since 1964, is staffed 24 hours a day with specially trained nurses, certified hyperbaric technicians, and physicians. Many people refer to our unit as the Hyperbaric Chamber because there really is a chamber here. The chamber is made of steel and weighs 60 tons. It is 66 feet long and consists of four interconnected chambers, which can be used separately or all at one time. We are able to use one chamber to treat certain patients, while at the same time, use another chamber to treat other patients. Thirteen is the most patients that we have treated simultaneously.

What is Hyperbaric Medicine?

Hyperbaric oxygen therapy is a medical treatment in which the patient breathes 100 percent oxygen while inside a chamber at increased atmospheric pressure. The patients (but not the attendants) are placed on 100 percent oxygen via a type of special mask, oxygen hood, or ventilator while inside the chamber. When a patient is in the hyperbaric condition, the 100-percent oxygen inhaled at three atmospheres of pressure produces an arterial oxygen partial pressure as high as 2200 mm Hg, rather than in the normal range of 70 to 100 mm Hg. While a patient is in this environment, high concentrations of oxygen are dissolved into the patient's blood and tissue.

HBO is useful for conditions in which ischemia, edema, bubble formation, or the presence of a toxin interferes with tissue function, survival, or repair. It can also successfully treat tissue injured by radiation therapy, complicated wounds, grafts and flaps, decompression sickness, air gas embolism, or carbon monoxide poisoning.

How does Hyperbaric Medicine work?

The two main benefits of HBO treatment are increased oxygenation to tissue and plasma, and decreased bubble size. For example, HBO is used as a treatment for complicated wounds because the increased oxygen helps the tissue to heal. HBO is used as a treatment for gas embolism or decompression sickness ("the bends") because the pressure in the chamber decreases the bubble that is occluding tissue or a blood vessel, and along with the increased oxygen, can eliminate the bubble. In the case of carbon monoxide poisoning, the goal of HBO is to rapidly increase the amount of oxygen dissolved in plasma to supply the heart and brain. The carbon monoxide molecule has a 240-times greater affinity for hemoglobin than does oxygen. Carbon monoxide poisoning makes the patient hypoxic because it "ties up" the hemoglobin from carrying oxygen. With

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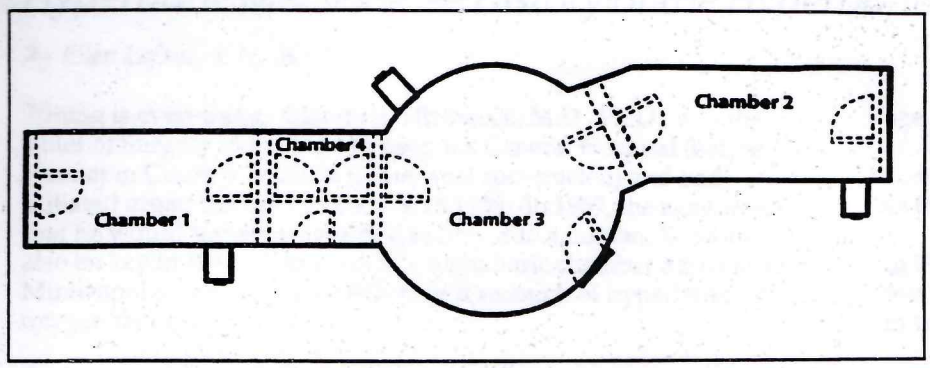
HYPERBARIC continued from page 1



HBO, oxygen is dissolved in plasma, so that one could say that while a patient is in the chamber, oxygen can be delivered independently of hemoglobin. Thus, the hypoxic state is terminated shortly after initiating HBO treatment.

Last year there were more than 1,750 patient treatments completed at the Hyperbaric Medicine Unit. The unit cares for a broad range of patients including routine daily patients, who arrive on the unit every morning for treatment, and extremely critical patients, who arrive at any time. An example of our routine patient is someone with radionecroses, a breakdown of bone or tissue from radiation therapy. The treatment protocol for radionecrosis is most often around 30 treatments. They are treated once a day, Monday through Friday, for six weeks. The daily treatments in the chamber last 90 minutes. While in the chamber, the patients relax in comfortable chairs or on stretchers. They read or listen to music.

The other type of patient that the unit treats is more critical and arrives from the Emergency Department. Examples of this type of patient might be someone with carbon monoxide poisoning or a patient with a life-threatening severe wound infection such as necrotizing fasciitis.

"Are you ready to come up now?"

At the end of the treatment, the technician asks the nurse if the group inside the chamber is ready to depressurize. During the last few minutes of the treatment, the pressure inside the chamber is gradually decreased to normal atmospheric pressure. The chamber gets very cool inside as the air decompresses. The patients are covered with quilts. A fog often forms within the chamber. The door to the chamber opens. The fog clears. Our patients leave, and the staff performs a number of cleaning and maintenance tasks to ready the chamber for the next HBO patients.

The Hyperbaric Medicine Unit is located approximately two blocks from the hospital at 5th and Portland. If you would like to tour the chamber or would like more information, call us at 337-7420.

SPIRITUALITY AND HEALTH

Reported by Carol Oeltjenbruns, R.N.

From the September Spirituality and Health brown bag session: "Sacred Moments: The Use of Ritual in the Health Care Setting" presented by the Chaplaincy Department. One contact hour is given for nursing.

Spirituality concerns in health care are included in the ANA Code of Ethics and in JCAHO standard RI.1.3.5 and PE. 7.

At the session, staff and participants gave examples of some of the rituals that are performed here in the hospital including American Indian ceremonies, service for a perinatal death, transitional events to mark going from hospital to hospice, and graduating from cardiac rehabilitation.

A sample of the handout of excerpts from Robert Fulghum's book *From Beginning to End, The Rituals of Our Lives.*

The Propositions:
To be human is to be religious.
To be religious is to be mindful.
To be mindful is to pay attention.
To pay attention is to sanctify existence.

Rituals are one way in which attention is paid.
Rituals arise from the stages and ages of life.
Rituals transform the ordinary into the holy.

Rituals may be public, private, or secret.

Rituals may be spontaneous or arranged.
Rituals are in constant evolution and reformation.

Rituals create sacred time.
Sacred time is the dwelling place of the Eternal.
Haste and ambition are the adversaries of sacred time.

Is this so?
Rituals are timed by beats of the heart, not ticks of the clock.
Most of our major holidays are connected to seasons.
They are flexible feast days adapted to human needs.
Heart time is not clock time — rituals should never be hurried.

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